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UTCS ComputerNews

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The Editor
COMPUTERNEWS
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Increased Microcomputer Support

Over the past year, UTCS has witnessed a growing demand for microcomputer support on campus. As the use of small machines proliferates, we are finding that more and more users require assistance or information of some kind, such as:

1. What software and/or hardware to acquire.
2. How to install it properly.
3. Distribution of public domain software.
4. Use of microcomputers in the Microcomputer Lab (i.e., for evaluation purposes).
5. Using one's microcomputer as a terminal communicating with a mainframe or network service.
6. Transferring data between microcomputer and mainframe.
7. Use of database, spreadsheet, and word processing packages.

To help satisfy the increasing demand, we are planning to add another full-time Microcomputer Specialist to the Applications Support Group. This person will provide general microcomputer consulting but will also be responsible for promoting and supporting the use of microcomputer database products, such as dBASE II. S/he will work closely with Grant Davis, the current Microcomputer Specialist, in continuing to provide a microcomputer consulting service to the University community.

In addition to the increase in manpower, the following things are happening in an effort to improve or enhance microcomputer support:

1. The Central Advising Office is acquiring an IBM Personal Computer. This will be used to help train consultants and advisors. Initially, we expect training in the use of the Mainframe File Transfer Facility, KERMIT, and in using one's microcomputer as a terminal to sign on to UTCS mainframes. In the long term, we hope to be in a stronger position to provide specific software support on microcomputers (e.g., for dBASE II) through the Advising service.
2. A set of specific UTCS-supported microcomputer software products will be sold by UTCS, acting as a distributor for vendors. The price offered to University users will be much lower than commercial rates. Although we are still working out the details, such products will certainly receive some measure of support from UTCS. Currently, The FinalWord is being offered (see "UTCS to Distribute the FinalWord" elsewhere in this issue); others will be announced upon completion of financial arrangements with vendors.
3. KERMIT is coming soon (see "KERMIT Update" elsewhere in this issue).
4. UTCS, in the person of Grant Davis, is helping to form the University of Toronto Microcomputer Committee, which would include representatives from recognized microcomputer users groups (e.g., IBM PC, Apple, and CP/M Users Groups). Among other things, this Committee could contribute significantly to our long-term planning process and provide useful information about where our microcomputer specialists should concentrate their efforts.

All of the above should contribute to increased microcomputer support at UTCS.

Paul Roth

UTCS Library Reorganization and Updating

Those who regularly consult the UTCS Reference Library in the Information Office know that it is gradually being reorganized and updated. The updated collection will reflect the systems and products currently supported at UTCS, and the library organization will adhere as much as possible to the subject groupings of the new documentation. For example, there will be shelves for Text Products and Numerical Products, for APL and DEC. The IBM section will remain separate.

The physical rearrangement was done before Christmas, but the old catalogue numbers, which were no longer valid, still appeared on each item. To ease this problem, the shelves were labelled to help users find the area they needed. (It was felt that the small size of the collection made it possible for people to locate a specific item within a subject area.) Now the material has been recatalogued, and the new codes will appear imminently. These codes are largely alphabetic, and mnemonic wherever possible. The first line represents the general subject area in a short form; this is the same subject as appears on the shelf labels mentioned above. The next line usually indicates a specific or generic product, such as BMDP, SAS or FORT(RAN). The third line is almost always numeric; while it has significance to the cataloguer, the user need see it only as the unique identifier of a given item. In addition, the shelf labels and code stickers will be colour coded according to subject. IBM manuals will continue to be shelved by their form numbers (e.g., GC20-0731), disregarding the first letter.

The process of updating has also begun. In accordance with library policy, manuals for products or versions of products no longer running at UTCS have been weeded, and a significant sum has been set aside to replace missing or obsolete manuals. However, no special effort will be made to obtain or replace documentation for products with Class C support.

Although these changes will not be complete for a while, we hope to produce an interim catalogue and KWIC (Key Word In Context) index fairly soon. The separate KWIC index for the IBM manuals is still of use and remains on the shelf.

Martha Parrott

Documenting an APL Utility

This article contains an outline of basic documentation necessary for any large utility written in APL, with special emphasis on documentation required for maintenance. Such a utility may be a group of functions within a workspace, it may be a whole workspace, or it may be spread over more than one workspace. The documentation required for any program or utility may be divided into two broad categories:

User's Documentation

This is the documentation required by the ordinary user of a utility. It describes what the utility is and how it is to be used. It lists available commands and gives details of all required input and all possible output. It is written in the language of the problem and assumes no programming knowledge whatsoever. Although this documentation will usually exist as a user's manual, it may also include documentation variables in the workspace. The user's documentation for most of the UTCS public library workspaces exists as documentation variables.

Programmer's Documentation

This is the documentation needed by a pro-

continued...

Documenting an APL Utility continued

grammer who is required to fix or maintain a utility. Programmer's documentation should be a required part of the design of any project, on ANY system; I have simply discussed it here in terms of APL. This documentation may exist in a variety of places. It may include documentation variables in the workspace, comments in individual functions, and separate written documentation outlining the structure of the workspace.

It should be noted that some large utilities require stewards or administrators who oversee use of the utility. The steward may have special privileges in the utility and may also be able to perform some maintenance on the system. The steward's manual will probably contain a combination of user's and programmer's documentation.

All available documentation should be provided to a programmer who is required to fix, maintain, or further develop a utility. The form and requirements of user's documentation are outside of the scope of this article. Instead, this discussion will be devoted to the documentation required specifically by a programmer, or to some extent by a steward, of an APL utility. Such documentation will be referred to as "Maintainer's Documentation."

Please note that this article by no means represents a standard protocol. It simply outlines what I believe is important in this kind of documentation, and the overall format I use myself. Any suggestions or criticisms would be welcome.

Maintainer's documentation should include the following information:

Brief Summary

AUTHOR: Name of the programmer, and how the programmer may be reached (if at all possible).

WORKSPACES:
Names of all workspaces involved.

FILES: Names of all files involved.

DEPENDENCIES:
Anything else on which your workspace depends.
In particular, the functions:
SUBMIT, SUB̲, ⎕LOAD, ⎕QLOAD, ⎕RUN, BTASKREQ, BTSUBMIT, AUTOPREQ, and HSP.

DATE: Date initially implemented.

UPDATE: Date of each update or change installed into workspace
Name of person who installed each change.

FURTHER INFORMATION:
Any source of relevant information, such as texts from which methods were taken, relevant SATNs, any user manuals.

Statement of the Purpose and Design Constraints

A brief, concise statement of the purpose of the workspace. Also a description of the design constraints.

More Detailed Information

FOR EACH WORKSPACE

An explanation of the purpose. A list of key (command) functions of the workspace. Some idea of the structure of the workspace. Within each workspace, the functions should be commented. Each function should have at least one line of comment which briefly states its purpose. If any fancy programming is done, it should be explained. Input and output requirements of key functions should be given.

FOR EACH FILE

An explanation of the purpose of the file. A description of the file's access matrix and the structure of the file. A description of all functions which may read or write the

continued...

Documenting an APL Utility continued

file. Ideally, this information should also exist as the first component of the file.

DEPENDENCIES

- Use of XFR and ARJES

  If the utility submits jobs to be executed in the background, then you must also say exactly where JCL is generated or stored. This is extremely important because periodically there will be changes to the operating system which will be reflected in your JCL. An excellent recent example was the XFR class change. In this case the change itself was trivial, but locating the effected JCL was very time consuming. Please note that this applies to you if your utility submits jobs to be executed outside of APL using the function SUB̲ from the APL workspaces 5 ARJES or ARJU, or the function SUBMIT from the APL workspace 1 XFR.

- Use of FILEPRINT and HSPRINT

  Requests for highspeed printing of APL files may be submitted using the AUTOPREQ or PRINTREQ function from the APL workspace 1 FILEPRINT, or the HSP function from the workspace 1 HSPRINT. If your utility submits such requests, then you must note where and how the requests are generated. You must also note where and how the files to be printed are created. This is particularly important because 1 FILEPRINT will eventually be phased out in favour of 1 HSPRINT, and the required format for files to be printed using 1 FILEPRINT is different from that for 1 HSPRINT. **No new applications should be written in 1 FILEPRINT!**

- Use of N-Tasks and B-Tasks

  If the utility generates an N- or B-task, then you must note where and how the request is generated, and the name of the load workspace for each such task. If the utility generates N- or B-tasks, and then interacts with them, you must describe such interactions in some detail. This information is easily available to the programmer who wrote the utility but could take days to figure out for another programmer who is not familiar with the utility. N-tasks are generated using the system function ⎕RUN. B-tasks are generated using the BTASKREQ or BTSUBMIT function from the APL workspace 1 BTASKREQ.

- The use of ⎕LOAD or ⎕QLOAD

  If workspaces are loaded during function execution, this must be noted. Dependencies from one workspace to the next must be described in detail. Please note that extensive or sloppy use of these functions is extremely confusing and should be avoided.

History

For each change describe: who made the change; what exactly was changed; and the reasons for the change. This documentation must always be written with the assumption that a complete stranger will have to read and understand it. When a function is fixed, an old version must be kept accessible in case fallback is required. Sometimes a side effect may become apparent months after the change, so it is a good idea to have the original code available for examination or fallback.

Mary Ann Lawry

The UTCS Guide to APL XFR

The UTCS Guide to APL XFR is available online as of March 2, 1984. This guide replaces the XFR part of USERBOOK Section 4: "Interactive Services." XFR is a utility on the IBM machine which may be used for transferring data between APL files and IBM datasets. The UTCS Guide to APL XFR deals specifically with setting up an XFR job to do this transfer. For further information about submitting your XFR job please see the APL public library workspace: 1 XFR. If you find any errors or ambiguities in this manual, please contact Mary Ann Lawry at 978-6878.

The workspace 1 UTCSGUIDE contains a utility which may be used to request the printing of UTCS guides. To use this utility sign on to APL and type:

```
)LOAD 1 UTCSGUIDE
HELP
```

This will display the variable "HELP" which outlines available documentation for this workspace. The APL function which you will use to submit the request is also called "UTCSGUIDE". Please note that a General Purpose Job Stream Service Access Code (GPJS SAC) is required to use 1 UTCSGUIDE.

In the following examples Joanne Smith is submitting requests to print the UTCS Guide to APL XFR.

Ms. Smith has a GPJS SAC of 1234, with the password, "ABCD". She is not specifying a destination, so the jobs will be printed at the central site in McLennan Labs at 255 Huron Street. Her output will be filed at the central site under "S". She is requesting multiple copies, and that the manual be printed on "thesis paper" (FORMS CODE=2018). Although this will be a more attractive copy than if the default had been chosen, it will cost a bit more. In the first example, she is using the function "UTCSGUIDE" interactively; in the second, she enters all specifications in the right hand argument to the function.

Example One:

```
‘APLXFR’ UTCSGUIDE ‘’
GPJS SAC:                 1234
PASSWORD:                 ABCD
PROGRAMMER NAME:          SMITH,JOANNE

PRINT DESTINATION:        <enter a carriage return>
FORMS CODE:               2018
COPIES:                   3
```

Example Two:

```
‘APLXFR’ UTCSGUIDE ‘1234;ABCD;SMITH,JOANNE;;2018;3’
```

To give an idea of the cost of printing this manual, here is a breakdown of the cost of printing one UTCS Guide to APLXFR on thesis paper (FORMS CODE=2018). This breakdown assumes a University user; the job would cost slightly more for a non-University user. Rates used are those effective November 1, 1983.

APL session	$0.17	
Print Job	$3.02	
Forms Mount	$3.25	Real Money
Paper	$0.42	Real Money

Total	$6.86	of which $3.67 is real money.

If, on the other hand, forms code had not been specified there would have been no forms mount or paper charge. The resulting manual would be quite readable, just not as pretty.

Mary Ann Lawry

Microcomputer News

The UTCS Microcomputer Facility is gradually increasing its collection of public domain software. (Public domain software can be copied legally.) If you have something that might be useful to other microcomputer users, and there are no restrictions on copying it, please consider providing us with a copy. Two programs currently in our library are of particular interest: PC-TALK III for the IBM PC and OTERM4 for the OSBORNE microcomputers. These programs allow their respective microcomputers to function as terminals when hooked up to a modem. They also allow some limited forms of file transfer to other microcomputers (both programs support the Christensen - XMODEM protocol). However, neither program supports file transfers to WYLBUR or TSO datasets. For more information on that type of transfer, see the "KERMIT Update" in this issue.

There are now three active microcomputer users groups operating at the University. The established Apple and IBM PC groups have been joined by a CP/M users group. The CP/M Users Group has had two meetings to date, and an executive committee is just forming. If you are interested in assisting or in attending the meetings, please get in touch with me. The April meetings of all three groups will be held jointly because of general interest in the planned topic: Prof. Martin Lamb of U of T will be speaking on "Computer Assisted Instruction." This meeting will be held on Wednesday, April 12, at 7:00 p.m. in the Wallberg Building, Room 116.

For further information contact Grant Davis at 978-5071.

Grant Davis

KERMIT Update

The KERMIT file transfer service is currently being tested by a small number of users, and we expect this new file transfer service to be in production during the month of May. This service allows for the error-free transfer of files between a user's microcomputer and the IBM 3033/N12. It is based on a file transfer protocol called KERMIT.

This file transfer service is especially useful for those who have data which they need to transfer, without error, to another computer. For example, a user might collect data on a micro and want to transfer it to the IBM 3033/N12 to analyze the data using SAS.

KERMIT transfers files by having two KERMIT programs communicate with each other; one on the mainframe and one on the user's computer. These programs make transfers by exchanging packets of data with error-checks.

We are implementing the mainframe end of KERMIT not on the IBM 3033/N12 directly, but on the Communications "HUB" VAX. The VAX acts as a file server for the IBM.

UTCS provides software and support for transfers between the IBM 3033/N12 and the following micro/minicomputers for specific hardware configurations and the operating system indicated.

1. IBM PC or XT (MS-DOS 1.1 or 2.0)
2. APPLE II (DOS 3.3) with Super Serial Card
3. DEC LSI-11 (RT-11 V4 or V5) with DL11 serial interface

continued...

KERMIT Update continued

Although there are versions of KERMIT for other micros and operating systems, and some of these may work, UTCS is currently supporting only those listed above.

Charging for this service is based on connect time, with the rates reflecting our costs.

For more information contact Grant Davis at 978-5071.

Philip Murton

Nanocomputer News

Usage of the recently established Nanocomputer Lab has been increasing steadily. We now have t(iny)-machines from three different vendors, including the ORANGE Pip, TI's Mighty Mite, and the IBN PC Zygote. These t-machines are all available to UTCS users. In addition, several vendors have arranged to lend us nanos so that we can inform University users on the capabilities of these t-machines. The first of these to be examined is Tracy Corporation's Smart Bug, and a report on this t-machine will be available soon.

In the area of developing nanotechnology, Tracy is expected to announce the TWWT (Two-Way Wrist Telecomputer) in the next few weeks. BIC is planning to introduce the Flick, a nano which can plug into any standard car cigarette lighter, and APPLE is contemplating a disposable, battery-powered nano, tentatively named the Core.

Finally, although UTCS has announced that it has no plans to support the new computerized Pet Rock, interested users may contact the Pet Rock SIG through the Geocomputing Department.

Averill Phoule

UTCS to Distribute The FinalWord

UTCS is now a licensed distributor for The FinalWord, a text processing package for Personal Computers, described in the January/February issue of *COMPUTERNEWS.* Under the terms of the agreement with the vendor, UTCS is offering a copy of The FinalWord to members of the University community at the attractive price of $195.00 (normally it retails for US$300.00).

For more information about The FinalWord, or to arrange a demonstration, please contact John Bradley, the Textual Computing and Humanities Supervisor, at 978-3995.

To arrange for its purchase, please contact our Microcomputer Specialist, Grant Davis, at 978-5071.

Paul Roth

Graphics in TSO Full Screen Mode

Interactive graphics on the IBM 3033/N12 will be extended to TSO full screen mode by the end of April, 1984 to complement the existing TSO line mode interactive graphics. The exact implementation date will be announced in HOTNEWS.

Users who log their graphics terminals on to the IBM machine via Series/1 (Class 132) will be able to do their full screen mode applications and graphics without reverting to TSO line mode (Class 32) for the latter. The KIG drivers that will first support full screen mode graphics include the HP2648, GIGI(Dec VT125 or "REGIS" series) and TEK4015 (Tektronix 4010 series). The corresponding SAS/Graph KIG drivers will also be upgraded accordingly. For example, users of SAS/FSP (Full Screen Product) will be able to use SAS/Graph interactively in the same session.

Further information is available in HELP FSGRAPH. Any questions or requests for support of other graphics terminals or devices should be directed to Kin Fong at 978-4924.

Kin Fong

SAS/Graph KIG Drivers Upgrade

The KIG drivers in SAS/Graph will be upgraded to take advantage of the polygon/rectangular fill exits in the SAS/Graph Universal driver. This will allow better utilization of terminals or devices with polygon/rectangular fill capability. Some of the resulting advantages are faster generation of graphs on the terminals and less computation on the mainframe computer.

The SAS/Graph KIG drivers for HP2648 and GIGI (Dec VT125 or "REGIS" series) terminals will be upgraded by the end of April, 1984. Users who would like similar support for other graphics terminals or devices should contact Kin Fong at 978-4924.

Please watch HOTNEWS for further information and exact implementation date. If there are any questions, please do not hesitate to contact Kin at the above number.

Kin Fong

1981 Census Tapes

Many users will be pleased to hear that some of the 1981 Census Tapes are now available through UTCS and more are on the way. Once the entire order has arrived, a general table of contents to the tapes will be provided. In the meantime, users who need more information or wish to access the data now should call Diane Mitchell at 978-5128.

All of the short-form tapes at the census subdivision and census tract level have been ordered, as well as the special series which provides data at selected standard geographic levels (e.g. CMAs). These tapes will contain tables on cultural characteristics, demography, dwellings, families, and households. For the long-form tapes, all of the census tract level information will be arriving. The tables on these tapes will also show income information and economic characteristics.

continued...

1981 Census Tapes continued

In addition, several of the special files have been ordered. The Census of Agriculture, the Postal Code Conversion File and the Street Index file will be very useful to researchers in many areas. CARTLIB, a digital cartographic library of statistical area boundaries, will be available at both the census tract and census division level. The Land Area file lists the area measurement in square kilometers at the census tract level.

To make it as easy as possible for users to access the census tables, the SNAC support group at UTCS is organizing the tapes and documentation as they arrive. This work is being done in cooperation with the Government Publications Department of Robarts Library, which will also maintain a complete set of documentation. More details on this will appear as the project progresses.

Diane Mitchell

BMDP '83

The article on BMDP '83 in the last issue of *COMPUTERNEWS* described some of the new features available in the 1983 release as well as some of the changes. The updated manual can be purchased at the UTCS Information Office.

Users are encouraged to try the 1983 release during the test period. The following JCL should be used to access the test version:

```
      // EXEC BMDP,LEVEL=83
  or
      // EXEC BMDPOPEN,VERSION=83
  or
      // EXEC SASBMDP,BMDLEVL=83
```

If you encounter any problems, please call the Central Advising Office at 978-HELP.

BMDP '83 is scheduled to go into production on April 30. At that time, the 1981 Release of BMDP will be removed from the system permanently.

Diane Mitchell

UTCS Noncredit Short Courses

Computing Services is offering the following short courses in April and May. Complete course descriptions for these and other noncredit courses offered at UTCS are available at the Information Office, Engineering Annex, Room 206.

All short courses are held in the UTCS Education Facility, Room 221, McLennan Physical Laboratories. Due to the limited seating capacity in the Education Facility and the number of terminals available for our hands-on courses, registration is required for short courses.

Anyone interested in taking any of these courses must register in person with:

Educational Services Support Specialist
Engineering Annex, Room 207
978-4565

Please note that we reserve the right to cancel courses, if registration is too low.

continued...

Short continued

A $10 Administration Fee, payable either by cash or cheque, is due at the time of registration. A noncomputing appropriation number is acceptable for payment for a minimum of two course registrations.

Registrants are required to hold a valid Service Access Code (SAC) for use during the course. You may arrange to open an account with the UTCS Accounting Office, McLennan Physical Laboratories, Room 337.

DDS101 - Introduction to IBM Disk Datasets

Date: April 6, 1984
Time: 10:00-12:00 noon

Date: May 11, 1984
Time: 10:00-12:00 noon

JCL101 - Introductory JCL

Date: May 28-June 1, 1984
Time: 11:00-12:00 noon

SAS101 - Introduction to SAS

Date: TBA
Time: TBA

SAS201 - Intermediate SAS

Prerequisite: SAS101

Date: April 23-27, 1984
Time: 2:00-3:00 p.m.

SCR102 - SCRIBE for Beginners

Date: April 12-13, 1984
Time: 9:30-12:30 p.m.

WYL101 - Introduction to WYLBUR

Prerequisite: DDS101

Date: April 9-11, 1984
Time: 10:00-12:00 noon (April 9-10)
10:00- 1:00 p.m. (April 11)

Date: May 14-16, 1984
Time: 10:00-12:00 noon (May 14-15)
10:00- 1:00 p.m. (May 16)

Irene Rosiecki

Change Committee

Changes To The Academic and Administrative Systems

1. A facility was put in place on February 8, which allows users to produce their own output tapes for processing on the Xerox 9700 laser printer.
2. A new release of NAg Mark 10 was installed on February 7.
3. A Xerox 8700 laser printer has been proposed for installation and should appear in the near future. This change will provide a much better quality output and a more versatile service.
4. The last of the CDC 3350 drives was removed on February 15. UTCS is still, however, running on some non-3380 DASD. Conversion of the master catalogue to ICF, installation of USER03, and relocation of WYLBUR ACTIVE and KWIK files is necessary before total conversion is completed.
5. Installation of SAS/GRAPH KIG drivers has been proposed for the end of April. This change will improve speed and utilization of high power graphics devices.
6. The new version of Waterloo SCRIPT has been received and is soon to be installed.

Changes to the PDP 11/70

1. Two direct lines were added for the Statistics Department on March 1.

continued...

Change Committee continued

Changes to the DECsystem 1090

1. HELP files listing available programs and products are being prepared and are scheduled for implementation by the end of March. This list will make users aware of previously unknown products and will show the support level of each product.
2. A new version of SCRIBE was installed for production on March 21.

Changes to Other Systems and Services

1. Three more ports were assigned to the Class 132 pool of ports on February 8.
2. The FinalWord is to become supported as a Class A product in the near future. This product will be compatible with SCRIBE and will give micro users better compatibility with mainframe word processing. See the article "Personals and Mainframes: The Final Word and SCRIBE" in the January/February issue of *COMPUTERNEWS.*

Joan Coutts

Hours of Service

Good Friday through Easter Sunday			
	April 20 (Friday)	**April 21 (Saturday)**	**April 22 (Sunday)**
IBM 3033/N12 GPJS(Classes B,C,E), TSO, Calcomp	closed	10:00-18:00	10:00-18:00
IBM 3033/N12 GPJS(Class A), WYLBUR, APL	unattended	10:00-18:00*	10:00-18:00*
DECsystem-10, PDP 11/70	unattended	10:00-18:00*	unattended
BICS	unattended	unattended	unattended
Normal hours of service for all systems will resume Monday, April 23, 1984			

Victoria Day Weekend			
	May 19 (Saturday)	**May 20 (Sunday)**	**May 21 (Monday)**
IBM 3033/N12 GPJS(Classes B,C,E), TSO, Calcomp	10:00-18:00*	10:00-18:00*	closed
IBM 3033/N12 GPJS(Class A), WYLBUR, APL	10:00-18:00*	10:00-18:00*	unattended
DECsystem-10, PDP 11/70	10:00-18:00*	unattended	unattended
BICS	unattended	unattended	unattended
Normal hours of service will resume on Tuesday, May 22, 1984.			

* Running unattended outside these hours.

Personnel Changes

Wendy Chin Manager of Internal Systems and Administration has left UTCS for other opportunies elsewhere. Good Luck, Wendy!

Cecilio Commandante has left UTCS and returned to the Philippines.

Elizabeth Weitmann

New UTCS Documents

New UTCS Documents in hardcopy

Previously announced:

The SOS Workbook
UTCS Catalogue: Access, PART 1
UTCS Catalogue: Text Products
UTCS Guide to Mainframe File Transfer Facility
UTCS Guide to XEROX 9700 Printing

New UTCS Guides online

UTCS Guide to IBM MVS Online Storage
    (MANUAL=IBM DISK)
UTCS Guide to Mainframe File Transfer Facility
    (MANUAL=MFTF)

Previously announced:

UTCS Guide to APL (MANUAL=APL)
UTCS Guide to APL XFR (MANUAL=APLXFR)
UTCS Guide to GPJS (MANUAL=GPJS)
UTCS Guide to WYLBUR (MANUAL=WYINTRO)
UTCS Guide to XEROX 9700 Printing
    MANUAL=X9700SAM (with font samples, printed on the 9700)
    MANUAL=X9700 (without fonts, output from line printer)
    This Guide is also available in hardcopy from the Information Office. This is the cheapest way to obtain it.

To print online documents, WYLBUR users type "do document?", TSO users type "help document", APL users type ")LOAD 1 UTCSGUIDE <CR> HELP".

Recent Acquisitions in the Computer Library

Journal of algorithms.

SIAM journal on algebraic and discrete methods.

Reeman, Peter and Wasserman, A.I.
  Tutorial on software design techniques.
Silver Spring, Md., IEEE Computer Society Press, 1983.

Knuth, Donald E.
  The TeXbook.
Reading, Mass., Addison-Wesley, 1984.

Ullman, Jeffrey D.
  Computational aspects of VLSI.
Rockville, Md., Computer Science Press, 1984.

Stephanie Johnston

Consulting and Enquiries

Advising Supervisor	Alex Nishri	MP257	7109
External Marketing Consultant	Ihor Prociuk	MP345	6875
Erindale College	Peter Wall	2043	828-5311
Scarborough College	William Barek	S626	284-3173

General Enquiries	Dale Wright	EA206	4990
Account & Access Code Enquiries (U of T)	Agatha Stevens	MP337	8703
Account & Access Code Enquiries (External)	Sylvia May	MP337	7148
Tape Library (Academic Services)	Stella Martin	MP368	7319
Tape Library (Administrative Services)	Miranda Fong	MP368	6693
U of T Computer Library	Stephanie Johnston	EA206	2987

Central Advising Office (Appointments)	HELP	300 Baud Interactive Services	6200
Central Advising Office (Phone-in)	HELP	1200 Baud Interactive Services	3959
System Status Enquiries (DEC)	4318	DATAPAC	4320, 0056
System Status Enquiries (IBM)	7393	Telenet	0302043200056
		Tymnet	<backspace> DPAC;302043200056

UTCS Directory

Director	Dr. Warren Jackson	MP350	8948
Associate Director	Eugene Siciunas	MP350	5058
Senior Budget Analyst	Sheila Brown	MP350	8697
Managers			
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Internal Systems & Administration	TBA		
Operations	Dr. Bob Chambers	MP350	7092
Systems	Bill Lauriston	MP331	3579
User Interface	Don Gibson	MP345	7331

Committees on Computing

UTCS Board	Chairman	Prof. D.M. Nowlan	4984
BICS Steering Committee	Chairman	Prof. R.C. Holt	8726
Committee on Academic Computing	Chairman	Prof. J.Z. Buchwald	7391
Committee on Computer Networks & Telecommunications	Chairman	Mr. A. Heyworth	4936
Committee on Computing Facilities & Services	Chairman	Prof. J.D. Bossons	8626
Computing Disciplines Facility	Chairman	Prof. E.C.R. Hehner	6026
LIBRA Steering Committee	Chairman	Prof. G.S. Graham	6321
Natural Language Processing Steering Committee	Chairman	Prof. I. Lancashire	828-5273
UTCS Users' Committee	Chairman	Prof. J.C. Hurd	3056
	Secretary	Ms. C. Pereira	4463

UTCS Terminal and Advising Sites

Names and Locations

- **Central Advising Office (CAO), 978-HELP**
- **Education Facility (Educ),** McLennan Labs, 60 St. George St., Room 221
- **Engineering Annex (EAT, EUT, CDF),** 11 King's College Road, Rooms 103, 104, 107, 201, 203.
- **Erindale College (Erin), 828-5339,** Mississauga Road, Erindale Campus, Rooms 2005, 2039, 2045
- **New Physics (NPT),** Burton Tower, 60 St. George St., Room 1202
- **Robarts,** Robarts Library, 130 St. George St., Room 1061A
- **Scarborough College (Scar), 284-3122,** Military Trail, Scarborough Campus, Room S624, S625, S627, S628, S628A
- **Sidney Smith (AST & ASUT),** 100 St. George St., Rooms 1071, 1073, 2105
- **St.Michael's College,** 121 St. Joseph St., Room 101
- **Trinity College,** 6 Hoskins Ave., Room 024
- **Victoria University,** 73 Queens Park Cres., Room 012.

Sites	**Hours of Operation**				**Restrictions***	**Advising**
	Mon-Thurs	Fri	Sat	Sun		
AST	8:00-22:00	8:00-22:00	8:00-22:00	8:00-22:00	Research	Rm 2100
ASUT	7:00-24:00	7:00-24:00	7:00-24:00	7:00-24:00	BICS	Arranged by DCS
CAO	10:00-18:00	10:00-18:00	closed	closed	Research	978-HELP
CDF	24 hrs	24 hrs	24 hrs	24 hrs	Res/Under	No
EAT	24 hrs	24 hrs	24 hrs	24 hrs	Research	Rm 106
Educ	24 hrs†	24 hrs†	24 hrs†	24 hrs†	Research**	978-HELP
(outer)	24 hrs†	24 hrs†	24 hrs†	24 hrs†	Research	978-HELP
Erin (2039)	9:00-21:00	9:00-17:00	12:00-17:00	12:00-17:00	Research	Rm 2005
(2045)	9:00-21:00	9:00-17:00	12:00-17:00	12:00-17:00	Undergrads	Rm 2005
EUT	24 hrs	24 hrs	24 hrs	24 hrs	BICS	Arranged by DCS
NPT	24 hrs	24 hrs	24 hrs	24 hrs	Research (Key access)	978-HELP
Robarts	8:30-24:00	8:30-24:00	9:00-17:00	13:00-22:00	BICS	Arranged by DCS
Scar	9:00-24:00	9:00-24:00	10:00-17:00	closed	Research	Rm S624, S626
					Undergrads	Rm S624
St.Michael's	24 hrs	24 hrs	24 hrs	24 hrs	BICS	Arranged by College
Trinity	8:00-22:00	8:00-22:00	8:00-22:00	8:00-22:00	BICS	Arranged by College
Victoria	8:30-23:00	8:30-23:00	closed	closed	BICS	Arranged by College

* Research includes graduates, faculty, staff. ** May be unavailable due to UTCS courses. † Building closes at 22:00.

Advising Hours

AST	Monday to Friday, 10:00 - 18:00	Erin, Scar	During normal hours
CAO	Monday to Friday, 10:00 - 18:00	ASUT/EUT/ROBARTS	Monday to Thursday, 14:00 - 17:00
EAT	Monday to Friday, 13:00 - 17:00		Friday, 14:00 - 16:00

Services Available
(Y=yes, N=no)

	BICS	**Keypunch**	**LIBRA**	**PACX**	**Printers**	**Oracle**	**UNIX**
AST	N	Y	N	Y	Y	N	N
ASUT	Y	N	N	N	Y	Y	N
CDF	N	N	N	N	Y	N	Y
EAT	N	Y	N	Y	Y	N	N
EUT	Y	N	Y	N	Y	Y	Y
Educ	N	N	N	Y	N	N	N
Erin	N	N	Y	Y	Y	N	Y
NPT	N	Y	N	Y	Y	N	N
Robarts	Y	N	N	N	Y	Y	N
Scar	N	Y	Y	Y	Y	N	Y
St.Michael's	Y	N	N	N	Y	Y	N
Trinity	Y	N	N	N	Y	N	N
Victoria	Y	N	N	N	Y	N	N

UTCS Systems

3033/N12 Processor

- located in McLennan Physical Laboratories
- provides General Purpose Job Stream, TSO, WYLBUR, APL
- 12 megabytes of memory
- MVS with JES2

3033/U16 Processor

- located in McLennan Physical Laboratories
- provides instructional access using BICS
- 16 megabytes of memory
- UTS (modified UNIX Seventh Edition) under VM/370

4341 Mod II Processor

- located in McLennan Physical Laboratories
- provides administrative IMS/VS, DB/DC, Batch and TSO
- 16 megabytes of memory
- MVS with JES2

DECsystem-10 Model 1090

- located in McLennan Physical Laboratories
- provides General Purpose Time-Sharing
- 512 K - 36 bit words of memory
- TOPS-10 operating system, version 7.01A
- GALAXY queuing, spooling, and batch subsystem, Version 4.1

PDP 11/70 SAS/DPS UNIX

- located in McLennan Physical Laboratories
- provides UNIX text processing & Statistical Analysis Service (Dept. of Statistics)
- 4 megabytes of memory
- typesetting hardware (CAT/8) and, Varian for previewing typeset output
- UNIX Seventh Edition

VAX 11/750

- located in McLennan Physical Laboratories
- provides backup, program testing, and inter-communication relating to student services
- 3 megabytes of memory
- VMS

Computer Disciplines Facility

VAX 11/750 (2 megabytes of memory)
VAX 11/780 (4 megabytes of memory)

- located in Engineering Annex
- provide Computer Science interactive access
- UNIX (Berkeley Unix 4.2BSD)

Communications & Technical Support

- located in Sandford Fleming Building, Fourth Floor
- Communications Group provides communications systems, terminals, modems, data channels: consulting and installation.
- Field Service Group installs and maintains small computer systems on a contract basis or on a cost-per-call basis.
- provides consulting on minicomputers; configures and installs minicomputer systems

Microcomputer Facility

- located in McLennan Physical Laboratories
- provides consulting on microcomputer systems
  Machines include:
  IBM Personal Computer, APPLE II Plus,
  TRS-80 Model 1, S-100 CP/M System,
  Osborne Micro, plus a variety of
  others on loan from suppppliers
- offers media conversion services

Scarborough College Systems

VAX 11/750 (2 megabytes of memory)

- provides instructional access using LIBRA
- VMS

VAX 11/750 (5 megabytes of memory)

- provides instructional access using UNIX (Berkeley Unix 4.2BSD)

Erindale College Systems

VAX 11/780 (4 megabytes of memory)

- provides instructional access using LIBRA
  Research access
- VMS

VAX 11/750 (5 megabytes of memory)

- provides instructional access using UNIX (Berkeley Unix 4.2BSD)

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